

WHAT IS CLAIMED IS:

1. An aspiration catheter, comprising:  
an elongate catheter body;  
a guidewire lumen extending longitudinally through at least a portion of the elongate catheter body, the guidewire lumen having a proximal end and a distal end and being adapted for slidably receiving a guidewire; and  
an aspiration lumen extending longitudinally through the elongate catheter body, the aspiration lumen having a proximal end and a distal end, the aspiration lumen having an aspiration port along the distal end sized for aspirating particles from a blood vessel;  
wherein the elongate catheter body includes a distal segment wherein the aspiration lumen extends distally beyond the distal end of the guidewire lumen.
2. The aspiration catheter of Claim 1, wherein the distal segment of the aspiration lumen extends beyond the distal end of the guidewire lumen by about 2 mm to about 30 mm.
3. The aspiration catheter of Claim 1, wherein the aspiration port is formed with an angled tip.
4. The aspiration catheter of Claim 1, further comprising a plurality of side ports extending through the a side wall of the elongate catheter body along the distal segment, the side ports adapted for aspirating particles from a blood vessel.
5. The aspiration catheter of Claim 1, wherein the guidewire lumen is located only along a distal end portion of the elongate catheter body.
6. The aspiration catheter of Claim 5, wherein the guidewire lumen is about 30 cm or less in length.
7. The aspiration catheter of Claim 5, wherein the guidewire lumen is about 6 cm or less in length.
8. The aspiration catheter of Claim 1, further comprising a side hole formed in a wall along the elongate catheter body, the side hole defining the distal end of the guidewire lumen, the side hole being adapted to slidably receive a guidewire.

9. The aspiration catheter of Claim 1, wherein the elongate catheter body further comprises an irrigation lumen.

10. The aspiration catheter of Claim 1, further comprising a therapy device disposed along a distal end portion of the elongate catheter body.

11. An aspiration catheter system, comprising:

a guidewire;

a vascular filter disposed along a distal end portion of the guidewire;

an elongate catheter body;

a guidewire lumen extending longitudinally through at least a portion of the elongate catheter body, the guidewire lumen having a proximal end and a distal end and being adapted for slidably receiving the guidewire; and

an aspiration lumen extending longitudinally through the elongate catheter body, the aspiration lumen having a proximal end and a distal end, the aspiration lumen having an aspiration port along the distal end;

wherein the elongate catheter body includes a distal segment in which the aspiration lumen extends distally beyond the distal end of the guidewire lumen such that the aspiration port is advanceable into an interior volume of the vascular filter for removing embolic particles therefrom.

12. The aspiration catheter system of Claim 11, wherein the vascular filter is self-expanding.

13. The aspiration catheter system of Claim 11, wherein the vascular filter is mechanically deployable.

14. The aspiration catheter system of Claim 13, further comprising a pull wire having a distal end attached to the vascular filter and extending through the guidewire, the pull wire being slidable relative to the guidewire for mechanically deploying the vascular filter.

15. The aspiration catheter system of Claim 11, wherein the distal segment of the aspiration lumen is about 2 mm to about 30 mm in length.

16. The aspiration catheter system of Claim 11, wherein the guidewire lumen is located only along a distal end portion of the elongate catheter body.

17. The aspiration catheter system of Claim 16, wherein the guidewire lumen is about 30 cm or less in length.

18. The aspiration catheter system of Claim 16, wherein the guidewire lumen is about 6 cm or less in length.

19. The aspiration catheter system of Claim 11, wherein the elongate catheter body further comprises an irrigation lumen, the irrigation lumen having a distal end located distal to the distal end of the guidewire lumen.

20. The aspiration catheter system of Claim 11, further comprising a therapy device disposed along a distal end portion of the catheter body.

21. A method for treating a blood vessel, comprising:

providing a guidewire having a proximal end and a distal end and an expandable member disposed adjacent the distal end;

providing an aspiration catheter defining a guidewire lumen and an aspiration lumen having an aspiration port, the aspiration port being located distal to a distal end of the guidewire lumen;

delivering the guidewire transluminally through the blood vessel until the expandable member is located distal to a treatment site;

expanding the expandable member within the blood vessel such that the expandable member forms an interior volume adapted to capture and retain particles therein;

transluminally delivering the aspiration catheter over the guidewire until the aspiration port is located within the interior volume of the expandable member; and

applying a negative pressure at a proximal end of the aspiration lumen, thereby drawing particles from the interior volume into the aspiration lumen.

22. The method of Claim 21, wherein the expandable member is a filter.

23. The method of Claim 21, further comprising performing a therapy on the blood vessel at the treatment site.

24. The method of Claim 23, wherein the therapy is performed using a therapy catheter.

25. The method of Claim 24, further comprising removing the therapy catheter from the blood vessel before delivering the aspiration catheter.

26. The method of Claim 21, wherein the guidewire is slidably received by the guidewire lumen for facilitating advancement of the aspiration catheter over the guidewire.

27. The method of Claim 21, wherein the aspiration port of the aspiration catheter is advanced into the interior volume of the expandable member prior to applying the negative pressure.

28. A method for performing a procedure in a blood vessel, comprising:

delivering an elongate member transluminally through the blood vessel, the elongate member having a proximal end and a distal end and an expandable member disposed adjacent the distal end, the elongate member being advanced until the distal end is located in a desired location;

expanding the expandable member within the blood vessel, the expandable member when expanded at least partially enclosing an interior volume adapted to retain particles therein;

delivering an aspiration catheter transluminally through the blood vessel relative to the elongate member, the aspiration catheter having a proximal connector adapted for connection to a source of negative pressure and an aspiration port in fluid communication with the proximal connector and an aspiration lumen extending between the proximal connector and the aspiration port; and

applying a negative pressure to the proximal connector of the aspiration catheter while the aspiration port of the aspiration catheter is positioned within the interior volume of the expandable member to draw particles from the interior volume and out of the blood vessel.

29. The method of Claim 28, wherein the expandable member is a filter.

30. The method of Claim 28, wherein the expandable member is substantially occlusive.

31. The method of Claim 28, wherein the expandable member is self-expanding.

32. The method of Claim 28, wherein the expandable member is mechanically deployed.

33. The method of Claim 28, further comprising delivering the elongate member to a location wherein the expandable member is positioned distal to a desired treatment site.

34. The method of Claim 33, further comprising performing a therapy on the treatment site, the performing of therapy resulting in the particles within the enclosed volume of the expandable member.

35. The method of Claim 34, wherein the therapy is performed with a therapy catheter advanced over the elongate member.

36. The method of Claim 35, further comprising removing the therapy catheter from the elongate member before delivering the aspiration catheter.

37. The method of Claim 28, wherein the aspiration port is located at a distal end of the aspiration catheter.

38. The method of Claim 28, wherein the aspiration catheter is delivered over the elongate member.

39. The method of Claim 28, wherein the aspiration catheter further comprises a guidewire lumen, the guidewire lumen being adapted for slidably receiving the elongate member for advancing the aspiration catheter over the elongate member.

40. The method of Claim 39, wherein the aspiration port is located distal to a distal end of the guidewire lumen.

41. The method of Claim 28, wherein the expandable member is substantially basket-shaped and includes a proximal opening, and wherein the aspiration port of the aspiration catheter is delivered through the proximal opening prior to applying the negative pressure.